

Notice of Allowability

Application No.

09/593,547

Examiner

Guillermo Munoz

Applicant(s)

HEINONEN ET AL.

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/28/2004.
2. ☒ The allowed claim(s) is/are 5-9, 14-18, and 20 renumbered as claims 1-11.
3. ☒ The drawings filed on 17 July 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |


JEAN B. CORRIELLUS
PRIMARY EXAMINER

4/4/05

DETAILED ACTION

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Matthew S. Anderson on March 31, 2005.

The application has been amended as follows:

IN THE CLAIMS:

In claim 5, on line 3 change "a receiver" to —the receiver—; on line 4 change "a transmitter" to —the transmitter—; on line 13 change "a number of slope exceeding occurrences" to —the number of times the slope exceeds a timing threshold—.

In claim 7, on line 3 change "a receiver" to —the receiver—; on line 4 change "a transmitter" to —the transmitter—.

In claim 14, on line 8 change "the receiver" to —a receiver—; on line 16 change "a number of slope exceeding occurrences" to — the number of times the slope exceeds a timing threshold—.

In claim 16, on line 4 change "a transmitter" to —the transmitter—.

In claim 20, on line 13 change "a phase-frequency" to —the phase-frequency—.

Allowable Subject Matter

Claims 5-9, 14-18, and 20 are allowed.

The following is an examiner's statement of reasons for allowance:

Claims 5-9, 14-18, and 20 are considered allowable because the present invention comprises a method and circuitry for detecting loss of synchronization when an occurrence threshold is less than the number of times the slope of the received pilot signals phase-frequency relationship exceeds a timing threshold. The closest art, Kim et al. "A New Fast Symbol Timing Recovery Algorithm For OFDM Systems" (cited in office action mailed 7/15/2004) shows a similar circuit including a method for determining a slope of the pilot symbols having a phase-frequency relationship. However, Kim et al fails to teach determining a loss of synchronization when an occurrence threshold is less than the number of times the slope of the received pilot signals phase-frequency relationship exceeds a timing threshold. This distinct feature has been included in independent claims 5, 7, 14, 16, and 20 rendering them allowable. Claims 6, 8-9, 15, and 17-18 are dependent on allowed claims and are thereby allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

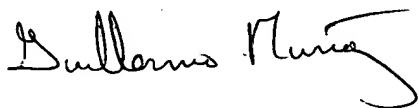
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Munoz whose telephone number is 571-272-3045. The examiner can normally be reached on Monday-Friday 8:30a.m-4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



GM
April 1, 2005



JEAN B. CORRIELLUS
PRIMARY EXAMINER

4/1/05